**Practical 5**

**Compiler Construction**

2CS701

**Mistry Unnat**

20BCE515



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**Aim :**

**To implement a calculator in YACC: Syntax Directed Translation**

Extend practical assignment 1 to generate a Symbol Table for identifiers, and label in the code. (Symbol Table columns : Name, Value)

Use YACC to Write a Grammar for multiple expression statements, and apply syntax directed translation for calculator.

**P5.l :**

%{

#include<stdio.h>

#include"y.tab.h"

extern int yylval;

%}

%%

"";

[0-9]+ {

    yylval=atoi(yytext);

    return NUMBER;

}

[\t] ;

[\n] return 0;

. return yytext[0];

%%

int yywrap()

{

    return 1;

}

**P5.y :**

%{

#include <stdio.h>

int flag=0;

%}

%token NUMBER

%left '+' '-'

%left '\*' '/' '%'

%left '(' ')'

%%

ArithmeticExpression: E{

    printf("\nResult=%d\n",$$);

    return 0;

};

E:E'+'E {$$=$1+$3;}

 |E'-'E {$$=$1-$3;}

 |E'\*'E {$$=$1\*$3;}

 |E'/'E {$$=$1/$3;}

 |E'%'E {$$=$1%$3;}

 |'('E')' {$$=$2;}

 | NUMBER {$$=$1;}

 ;

%%

void main()

{

    printf("\nEnter any Arithmetic Expression: ");

    yyparse();

    if(flag==0)

    {

        printf("\nEntered Arithmetic Expression is Valid");

    }

}

void yyerror()

{

    printf("\nEntered Arithmetic Expression is Invalid");

    flag=1;

}

**Output :**

